QC ABSTRACT

NAME OF WORK: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
7	Precast (250mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
8	PCC(M15)	Compressive Strength(7days and 28days)	1 set /1-5 cum	3.23	2	2
9	RCC(M20)	Compressive Strength(7days and 28days)	5 set /51-100 cum	64.1	10	10
10	Cement Concrete Pavemet (M30)	Compressive Strength(7days and 28days)	7 set /150-200 cum	160.36	14	14

AE-10
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11	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
12	DBM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
13	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
14	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
15	TACK COAT	Rate of spread	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-07-09-14** **Date: 06-01-20**
Project Name	:	Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.
Customer's Reference	:	BBMP/EE/BTP/WO/126/2019-20
Date of Receipt	:	02-01-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	03-01-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.95	–
2	Finess by Air permeablity method (m^2/kg,Min)	285.4	225m^2/kg, Min
3	Density (gm/cc)	3.12	–
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	240 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

ab ID	:	**CP-2020-07-09-14** **Date: 31-01-20**
roject Name	:	Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10
gency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.
stomer's Reference	:	BBMP/EE/BTP/WO/126/2019-20
te of Receipt	:	02-01-20
mple Type	:	Birla Super 53grade
ference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
te of test	:	03-01-20
vironmental Conditions during st	:	Temperature: 26°C Humidity: 72%

Compressive Strength

L No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	59.0N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-07-09-14** **Date: 06-01-20**

Project Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/126/2019-20

Date of Receipt : 02-01-20

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 02-01-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : **15000 grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	244	244	1.6	98.4	90-100
3	20 mm	5432	5676	37.8	62.2	30-70
4	10 mm	4332	10008	66.7	33.3	10-35
5	4.75 mm	4654	14662	97.7	2.3	0-5
6	Pan	338	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-07-09-14** **Date: 06-01-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.8	
3	Specific Gravity	2.68	_
4	Bulk Density(Loose) (Kg/l)	1.48	_
5	Bulk Density(Compacted) (Kg/l)	1.52	_
6	Water Absorption(%)	0.22	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-07-09-14** **Date: 04-01-20**
Project Name	:	Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.
Customer Reference	:	BBMP/EE/BTP/WO/126/2019-20
Date of Receipt	:	02-01-20
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	02-01-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	245	245	4.9	95.1	90-100
3	10 mm	2560	2805	56.1	43.9	25-55
4	4.75 mm	2033	4838	96.8	3.2	0-10
5	Pan	162	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-07-09-14 Date: 04-01-20

PHYSICAL PROPERTIES

SLno	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.6	
3	Specific Gravity	2.66	–
4	Bulk Density(Loose) (Kg/l)	1.54	–
5	Bulk Density(Compacted) (Kg/l)	1.58	–
6	Water Absorption(%)	0.22	–
7	Aggregate crushing Value(%)	24.5	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2020-07-09-14 **Date: 04-01-20**

Project Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/126/2019-20

Date of Receipt : 02-01-20

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 02-01-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	21	21	2.1	97.9	90-100	90-100	90-100	95-100
3	2.36 mm	185	206	20.6	79.4	60-95	75-100	85-100	95-100
4	1.18 mm	201	407	40.7	59.3	30-70	55-90	75-100	90-100
5	600 micron	168	575	57.5	42.5	15-34	35-59	60-79	80-100
6	300 micron	229	804	80.4	19.6	5-20	8-30	12-40	15-50
7	150 micron	153	957	95.7	4.3	0-10	0-10	0-10	0-15
8	Pan	43	1000	100.0	0.0	---	---	---	---

Result :**The tested Sample Conforms to Grading Zone II**

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TEST REPORT OF FINE AGGREGATE

: CP-2020-07-09-14 **Date: 04-01-20**

ICAL PROPERTIES

Tests	Result	Requirements as per IS 383:2016
Water Absorption(%)	1.42	_
Specific Gravity	2.53	_
Material finer than 75 micron(%)	3.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST RESULTS OF STEEL

Lab ID : **CP-2020-07-09-14** **Date: 08-01-20**

Project Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/126/2019-20

Date of Receipt : 07-01-20

Sample Type : Sunvik

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.

Date of test: : 07-01-20

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	528	672	21.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory
4	Sunvik	Fe500	16	1.581	572	674	19.0%	Satisfactory	Satisfactory

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TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2020-07-09-14**

Date: 22-01-20

Project Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/126/2019-20

Date of Receipt : 18-01-20

Sample Type /Size : Precast Cover Slab (100mm)

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of Test : 18/01/2020

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

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TEST REPORT OF PRECAST COVER SLAB

: **CP-2020-07-09-14** **Date: 22-01-20**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

: 18-01-20

Type /Size : Precast Cover Slab (250mm)

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

: 18/01/2020

Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
	(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
Cover Slab-1	200.51	250.48	3.116	31570	230.9	7.3	6.8	8.5
Cover Slab-2	200.49	250.52	3.122	31564	232.3	7.4	6.8	8.6
Cover Slab-3	200.50	250.51	3.118	31567	231.5	7.3	6.8	8.5

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 18/01/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

Receipt : 13-01-20

ID : PCC

Type /Size : 150X150X150 mm

grade/Age : M15 / 7 Days Compressive Strength

to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Test : 18/01/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
PCC	M15	11/01/2020	18/01/2020	150.74 X 150.30 X 151.62	22655	**8.928**	284.6	12.6	12.4
PCC	M15	11/01/2020	18/01/2020	149.15 X 149.79 X 149.45	22341	**8.730**	280.9	12.6	
PCC	M15	11/01/2020	18/01/2020	151.10 X 150.78 X 151.43	22783	**8.212**	274.8	12.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lot ID : **CP-2020-07-09-14** **Date: 08/02/2020**

Project Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Customer's Reference : BBMP/EE/BTP/WO/126/2019-20

Date of Receipt : 13-01-20

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of Test : 08/02/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	11/01/2020	08/02/2020	149.30 X 149.70 X 150.93	22351	**8.007**	394.7	17.7	17.3
2	PCC	M15	11/01/2020	08/02/2020	149.87 X 151.14 X 150.07	22651	**8.567**	385.8	17.0	
3	PCC	M15	11/01/2020	08/02/2020	149.68 X 151.32 X 151.82	22649	**8.312**	387.8	17.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

: CP-2020-07-09-14 **Date: 21/01/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

Receipt : 16-01-20

ID : Drain Bottom Slab Concrete

Type /Size : 150X150X150 mm

Grade/Age : M20 / 7 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 21/01/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	14/01/2020	21/01/2020	151.42 X 151.70 X 149.92	22971	**8.084**	423.9	18.5	18.4
Drain Bottom Slab Concrete	M20	14/01/2020	21/01/2020	151.33 X 150.51 X 150.27	22777	**8.440**	424.2	18.6	
Drain Bottom Slab Concrete	M20	14/01/2020	21/01/2020	151.80 X 151.89 X 150.56	23056	**8.904**	416.7	18.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

: CP-2020-07-09-14 **Date: 11/02/2020**

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: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

: 16-01-20

: Drain Bottom Slab Concrete

Size : 150X150X150 mm

Age : M20 / 28 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 11/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	14/01/2020	11/02/2020	150.25 X 151.62 X 151.07	22780	**8.283**	534.9	23.5	23.0
Drain Bottom Slab Concrete	M20	14/01/2020	11/02/2020	151.12 X 150.87 X 151.89	22799	**8.301**	505.2	22.2	
Drain Bottom Slab Concrete	M20	14/01/2020	11/02/2020	149.53 X 150.35 X 149.65	22482	**8.448**	526.3	23.4	

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: BBMP/EE/BTP/WO/126/2019-20

: 16-01-20

: Drain Bottom Slab Concrete

: 150X150X150 mm

: M20 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 21/01/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	14/01/2020	21/01/2020	150.95 X 149.53 X 149.43	22572	**8.084**	412.1	18.3	18.3
Drain Bottom Slab Concrete	M20	14/01/2020	21/01/2020	149.62 X 150.40 X 150.13	22502	**8.440**	410.8	18.3	
Drain Bottom Slab Concrete	M20	14/01/2020	21/01/2020	150.57 X 151.83 X 151.83	22861	**8.904**	417.9	18.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

: CP-2020-07-09-14 **Date: 11/02/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

: 16-01-20

: Drain Bottom Slab Concrete

/Size : 150X150X150 mm

grade/Age : M20 / 28 Days Compressive Strength

to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 11/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	14/01/2020	11/02/2020	149.84 X 149.38 X 150.40	22383	**8.283**	530.1	23.7	23.0
Drain Bottom Slab Concrete	M20	14/01/2020	11/02/2020	151.67 X 149.15 X 150.33	22621	**8.301**	504.3	22.3	
Drain Bottom Slab Concrete	M20	14/01/2020	11/02/2020	149.26 X 149.42 X 150.65	22303	**8.448**	515.0	23.1	

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: **CP-2020-07-09-14** **Date: 24/01/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

: 20-01-20

: Drain Side Wall Concrete

Size : 150X150X150 mm

Age : M20 / 7 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 24/01/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Side Wall Concrete	M20	17/01/2020	24/01/2020	151.02 X 149.22 X 150.35	22535	**8.084**	419.1	18.6	18.4
Drain Side Wall Concrete	M20	17/01/2020	24/01/2020	149.10 X 150.64 X 151.49	22460	**8.440**	417.4	18.6	
Drain Side Wall Concrete	M20	17/01/2020	24/01/2020	149.30 X 150.01 X 151.54	22395	**8.904**	405.3	18.1	

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: CP-2020-07-09-14 **Date: 14/02/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

: BBMP/EE/BTP/WO/126/2019-20

: 20-01-20

: Drain Side Wall Concrete

: 150X150X150 mm

: M20 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 14/02/2020

Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
M20	17/01/2020	14/02/2020	150.35 X 151.93 X 149.55	22841	**8.283**	539.4	23.6	23.0
M20	17/01/2020	14/02/2020	151.78 X 150.39 X 149.93	22825	**8.301**	502.9	22.0	
M20	17/01/2020	14/02/2020	149.47 X 151.93 X 149.30	22709	**8.448**	529.5	23.3	

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: **CP-2020-07-09-14** **Date: 28/01/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

: BBMP/EE/BTP/WO/126/2019-20

: 23-01-20

: Culvert Bottom Slab Concrete

: 150X150X150 mm

: M20 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 28/01/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Culvert Bottom Slab Concrete	M20	21/01/2020	28/01/2020	149.56 X 149.99 X 151.38	22433	**8.084**	420.1	18.7	18.5
Culvert Bottom Slab Concrete	M20	21/01/2020	28/01/2020	149.31 X 150.38 X 151.00	22453	**8.440**	416.9	18.6	
Culvert Bottom Slab Concrete	M20	21/01/2020	28/01/2020	151.35 X 151.77 X 150.11	22970	**8.904**	420.1	18.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 18/02/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

: BBMP/EE/BTP/WO/126/2019-20

: 23-01-20

: Culvert Bottom Slab Concrete

: 150X150X150 mm

: M20 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 18/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Culvert Bottom Slab Concrete	M20	21/01/2020	18/02/2020	149.86 X 151.37 X 149.02	22685	**8.283**	538.0	23.7	23.2
Culvert Bottom Slab Concrete	M20	21/01/2020	18/02/2020	151.15 X 151.73 X 151.69	22934	**8.301**	519.9	22.7	
Culvert Bottom Slab Concrete	M20	21/01/2020	18/02/2020	150.39 X 150.13 X 151.71	22578	**8.448**	526.5	23.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 31/01/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

: 27-01-20

: Culvert Side Wall Concrete

Size : 150X150X150 mm

Age : M20 / 7 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 31/01/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Side Wall Concrete	M20	24/01/2020	31/01/2020	150.05 X 151.29 X 150.11	22701	**8.084**	428.5	18.9	18.5
Side Wall Concrete	M20	24/01/2020	31/01/2020	150.24 X 149.39 X 149.77	22444	**8.440**	418.3	18.6	
Side Wall Concrete	M20	24/01/2020	31/01/2020	150.70 X 149.35 X 150.32	22507	**8.904**	406.4	18.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 07/02/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

: BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 07/02/2020

	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
	M30	31/01/2020	07/02/2020	150.89 X 149.82 X 150.99	22605	**8.856**	570.0	25.2	25.6
	M30	31/01/2020	07/02/2020	149.58 X 150.47 X 149.83	22506	**8.876**	607.4	27.0	
	M30	31/01/2020	07/02/2020	149.41 X 149.09 X 149.38	22275	**8.139**	545.8	24.5	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 28/02/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

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: BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 28/02/2020

Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
M30	31/01/2020	28/02/2020	149.05 X 151.23 X 149.32	22542	**8.447**	761.8	33.8	33.1
M30	31/01/2020	28/02/2020	151.15 X 149.26 X 150.68	22560	**8.835**	725.5	32.2	
M30	31/01/2020	28/02/2020	150.87 X 149.38 X 151.14	22537	**8.381**	749.8	33.3	

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: BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 07/02/2020

Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
M30	31/01/2020	07/02/2020	151.95 X 151.44 X 151.87	23011	**8.856**	586.5	25.5	25.7
M30	31/01/2020	07/02/2020	151.65 X 150.83 X 149.23	22872	**8.876**	607.8	26.6	
M30	31/01/2020	07/02/2020	151.77 X 150.55 X 151.71	22849	**8.139**	570.8	25.0	

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Reference : BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

Size : 150X150X150 mm

Age : M30 / 28 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 28/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Cement Concrete Pavement	M30	31/01/2020	28/02/2020	150.71 X 150.00 X 150.39	22607	**8.447**	750.3	33.2	33.1
Cement Concrete Pavement	M30	31/01/2020	28/02/2020	150.15 X 151.69 X 151.29	22777	**8.835**	736.7	32.3	
Cement Concrete Pavement	M30	31/01/2020	28/02/2020	149.22 X 151.31 X 150.81	22578	**8.381**	761.1	33.7	

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Reference : BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

Size : 150X150X150 mm

Age : M30 / 7 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 07/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Cement Concrete Pavement	M30	31/01/2020	07/02/2020	149.28 X 151.76 X 151.99	22654	**8.856**	567.1	25.0	25.4
Cement Concrete Pavement	M30	31/01/2020	07/02/2020	149.98 X 151.17 X 150.23	22672	**8.876**	599.1	26.4	
Cement Concrete Pavement	M30	31/01/2020	07/02/2020	149.59 X 151.81 X 151.55	22709	**8.139**	561.6	24.7	

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 28/02/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

: BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 28/02/2020

	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
	M30	31/01/2020	28/02/2020	149.33 X 151.16 X 150.08	22573	**8.447**	761.5	33.7	33.3
	M30	31/01/2020	28/02/2020	150.46 X 149.44 X 151.24	22484	**8.835**	736.7	32.8	
	M30	31/01/2020	28/02/2020	149.22 X 149.99 X 149.82	22382	**8.381**	747.1	33.4	

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: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

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Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
M30	31/01/2020	28/02/2020	149.33 X 151.16 X 150.08	22573	**8.447**	761.5	33.7	33.3
M30	31/01/2020	28/02/2020	150.46 X 149.44 X 151.24	22484	**8.835**	736.7	32.8	
M30	31/01/2020	28/02/2020	149.22 X 149.99 X 149.82	22382	**8.381**	747.1	33.4	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 07/02/2020**

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: BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 07/02/2020

Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
M30	31/01/2020	07/02/2020	150.98 X 150.37 X 150.87	22703	**8.856**	588.8	25.9	25.6
M30	31/01/2020	07/02/2020	150.56 X 149.12 X 150.04	22451	**8.876**	598.1	26.6	
M30	31/01/2020	07/02/2020	149.89 X 151.18 X 150.73	22660	**8.139**	551.2	24.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

: CP-2020-07-09-14 **Date: 28/02/2020**

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: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

: BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 28/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Cement Concrete Pavement	M30	31/01/2020	28/02/2020	149.79 X 149.69 X 149.92	22422	**8.447**	752.4	33.6	33.2
Cement Concrete Pavement	M30	31/01/2020	28/02/2020	151.23 X 150.77 X 150.63	22801	**8.835**	746.0	32.7	
Cement Concrete Pavement	M30	31/01/2020	28/02/2020	149.40 X 151.35 X 151.05	22612	**8.381**	753.9	33.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-07-09-14** **Date: 08/02/2020**

: Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

: BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 08/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Cement Concrete Pavement	M30	01/02/2020	08/02/2020	150.90 X 149.34 X 151.10	22535	8.856	572.7	25.4	25.2
Cement Concrete Pavement	M30	01/02/2020	08/02/2020	150.92 X 150.55 X 150.14	22722	8.876	594.4	26.2	
Cement Concrete Pavement	M30	01/02/2020	08/02/2020	150.28 X 150.42 X 151.80	22606	8.139	543.5	24.0	

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TEST REPORT OF CEMENT CONCRETE CUBES

: CP-2020-07-09-14 **Date: 29/02/2020**

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: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

Size : 150X150X150 mm

Age : M30 / 28 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 29/02/2020

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Cement Concrete Pavement	M30	01/02/2020	29/02/2020	149.86 X 149.18 X 151.19	22356	**8.447**	747.5	33.4	33.3
Cement Concrete Pavement	M30	01/02/2020	29/02/2020	150.38 X 150.11 X 150.14	22574	**8.835**	738.5	32.7	
Cement Concrete Pavement	M30	01/02/2020	29/02/2020	151.35 X 151.39 X 151.19	22913	**8.381**	775.4	33.8	

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ame : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

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r's Reference : BBMP/EE/BTP/WO/126/2019-20

eceipt : 03-02-20

r ID : Cement Concrete Pavement

ype /Size : 150X150X150 mm

rade/Age : M30 / 7 Days Compressive Strength

to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 08/02/2020

dentification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
ment Concrete Pavement	M30	01/02/2020	08/02/2020	150.02 X 149.65 X 149.33	22451	**8.856**	563.2	25.1	25.4
ment Concrete Pavement	M30	01/02/2020	08/02/2020	150.59 X 151.54 X 149.91	22820	**8.876**	610.0	26.7	
ment Concrete Pavement	M30	01/02/2020	08/02/2020	149.24 X 150.59 X 150.08	22474	**8.139**	551.0	24.5	

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Reference : BBMP/EE/BTP/WO/126/2019-20

: 03-02-20

: Cement Concrete Pavement

Size : 150X150X150 mm

Age : M30 / 28 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 29/02/2020

ification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
nt Concrete vement	M30	01/02/2020	29/02/2020	150.37 X 149.51 X 149.79	22482	**8.447**	763.6	34.0	33.6
nt Concrete vement	M30	01/02/2020	29/02/2020	150.16 X 149.84 X 151.03	22501	**8.835**	740.3	32.9	
nt Concrete vement	M30	01/02/2020	29/02/2020	149.30 X 150.60 X 149.06	22485	**8.381**	761.7	33.9	

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's Reference : BBMP/EE/BTP/WO/126/2019-20

eceipt : 03-02-20

ID : Cement Concrete Pavement

ype /Size : 150X150X150 mm

rade/Age : M30 / 7 Days Compressive Strength

n BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 08/02/2020

dentification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
ent Concrete Pavement	M30	01/02/2020	08/02/2020	151.02 X 151.39 X 149.27	22863	**8.856**	588.7	25.8	25.5
ent Concrete Pavement	M30	01/02/2020	08/02/2020	149.03 X 151.50 X 149.24	22578	**8.876**	595.4	26.4	
ent Concrete Pavement	M30	01/02/2020	08/02/2020	151.40 X 151.58 X 150.59	22949	**8.139**	559.3	24.4	

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Reference : BBMP/EE/BTP/WO/126/2019-20

ipt : 03-02-20

ID : Cement Concrete Pavement

/Size : 150X150X150 mm

ade/Age : M30 / 28 Days Compressive Strength

BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 29/02/2020

ification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Concrete Pavement	M30	01/02/2020	29/02/2020	151.03 X 149.75 X 149.21	22617	8.447	747.8	33.1	33.2
Concrete Pavement	M30	01/02/2020	29/02/2020	149.46 X 149.04 X 151.03	22275	8.835	734.7	33.0	
Concrete Pavement	M30	01/02/2020	29/02/2020	151.54 X 150.44 X 150.63	22798	8.381	763.8	33.5	

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TEST RESULTS OF GRADATION FOR WMM

ID	:	**CP-RW-2020-07-09-14** **Date: 27-01-20**
ect Name	:	Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10
ncy	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.
mer Reference	:	BBMP/EE/BTP/WO/126/2019-20
of Receipt	:	25-01-20
of Mix	:	WMM (Wet Mix Macadam)
of test	:	25-01-20
Dry Weight	:	11000 Grams

Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

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Certificate No.: TC-5548

TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

D	:	**CP-RW-2020-07-09-14** **Date: 27-01-20**
t Name	:	Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10
y	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.
mer Reference	:	*BBMP/EE/BTP/WO/126/2019-20*
f Receipt	:	25-01-20
f Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
f test	:	25-01-20

	Particulars of observations	Index	TEST 1	TEST 2
	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
	Aggregate impact value	(B/A)*100	24.6	24.7
	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

D	:	**CP-RW-2020-07-09-14**	**Date: 27-01-20**
ct Name	:	Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10	
y	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.	
mer Reference	:	BBMP/EE/BTP/WO/126/2019-20	
f Receipt	:	25-01-20	
of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
f test	:	25-01-20	

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
ined Flakiness and Elongation Index for WMM	25.3%	

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TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011)

: **CP-RW-2020-07-09-14** **Date: 05-02-20**

Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Reference : BBMP/EE/BTP/WO/126/2019-20

Receipt : 03-02-20

Mix : DBM-Plant (Dense Bituminous Macadam)

Test : 03-02-20

Sample : 5000 Grams

Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	250	250	5.00	95.00	90-100
19	350	600	12.00	88.00	71-95
13.2	450	1050	21.00	79.00	56-80
4.75	1750	2800	56.00	44.00	38-54
2.36	400	3200	64.00	36.00	28-42
0.3	1350	4550	91.00	9.00	7-21
0.075	250	4800	96.00	4.00	2-8
PAN	200	5000	0.00	0	0

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Certificate No.: TC-5548

SICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

: ***CP-RW-2020-07-09-14*** ***Date: 06-02-20***

Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

: Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

er Reference : BBMP/EE/BTP/WO/126/2019-20

Receipt : 03-02-20

Mix : DBM (Dense Bituminous Macadam)

est : 03-02-20

Table 500-6 : Physical Requirements fo Coarse Aggregate for Dense Bituminous Macadam

roperty	Test	Result	Specification	Method of Test
cal Shape	Flakiness Index	15.0	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	15.0		
trength	Aggregate Impact Value	18.0	Maximum 30%	IS:2386 Part IV
ific gravity	Specific gravity	2.58	Maximum 2.7	IS:2386 Part III
Absorption	Water Absorption	0.38	Maximum 2%	IS:2386 Part III

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R KARTHIK RECHAN
Authorized Signatory
Quallity Manager

End of Report

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Certificate No.: TC-5548

TESTS RESULTS ON STABILITY OF MIX

ID	:	**CP-RW-2020-07-09-14** **Date: 06-02-20**
ect Name	:	Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10
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tomer Reference	:	BBMP/EE/BTP/WO/126/2019-20
e of Receipt	:	03-02-20
e of Mix	:	DBM (Dense Bituminous Mecadam)
e of test	:	03-02-20

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

o	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
	Marshal flow at 60°C, mm	3.54	3.87	2-4
	Percent air Voids	4.56	4.17	3-5
	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
	Density, g/cc	2.42	2.40	–

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Certificate No.: TC-5548

TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

ab ID : **CP-RW-2020-07-09-14** **Date: 06-02-20**

roject Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

gency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

stomer Reference : BBMP/EE/BTP/WO/126/2019-20

te of Receipt : 03-02-20

pe of Mix : DBM(Dense Bitumnous Macadam)

te of test : 03-02-20

pe of Binder : 60/70

of Binder Used : 5.0%

eight of Aggregate : 200.0 gm

eight of Binder : 10.0 gm

mperature of water bath : 40°C

of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2020-07-09-14** **Date: 12-02-20**

Project Name : Providing Cement Concrete Road Construction of Culverts and RCC Drains and Providing Missing Covering Slabs in Kateramma Layout and Surrounding Areas in Ward No.10

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

Customer Reference : BBMP/EE/BTP/WO/126/2019-20

Date of Receipt : 11-02-20

Type of Mix : DBM (Dense Bituminous Macadam)

Date of test : 11-02-20

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	475	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.0	4.8
4	Average percentage	%	4.9	

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